

REMARKS

The Office Action dated July 9, 2004 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 2-7 and 9-11 are currently pending in the application and are respectfully submitted for consideration. Claims 1 and 8 have been previously cancelled.

The Office Action indicated that claims 2-4, 6, and 9-11 have been allowed. Applicants wish to thank the Examiner for the allowance of these claims.

Claims 5 and 7, however, were rejected under 35 U.S.C. 102(e) as being unpatentable over Carvey (U.S. Patent No. 6,359,879). The above rejection is respectfully traversed for the reasons which follow.

Claim 5, upon which claim 7 is dependent, recites a method for load balancing in a link aggregation environment, with multiple ports of a network switch being trunked together to form a single logical link. The method includes the steps of determining a length of a first frame and a length of a second frame entering the link aggregation environment, determining a flow rate of the first frame and the second frame entering the link aggregation environment, determining if the flow rate exceeds a predetermined flow rate threshold, determining if the first frame and the second frame are candidates for link switching and switching a transmission link for at least a portion of a packet flow for the flow rate for the second frame from a first transmission port to a second transmission port, of the multiple ports.

The method provides for redirecting at least a portion of the packet flow to a second port, where the ports are trunked together to form a single logical link. The link aggregation environment is discussed in greater detail in the present specification at page 109 and is defined under IEEE 802.3ad. Such methodology allows for greater bandwidth to be handled by a single logical link that is greater than the bandwidth for a single port.

The cited prior art reference of Carvey fails to disclose or suggest all of the elements of claims 5 and 7, and therefore fails to provide the features discussed above.

Carvey discloses an apparatus and method for composite trunking. An Internet router treats plural output ports with a common destination as a composite port and a routing table uses the IP address to determine a composite trunk to which the packet is to be forwarded. A forwarding table identifies a route along a routing fabric within the router to a specific output port of the composite port. Output ports and fabric routes are selected to maintain order within a flow by routing the flow along a single fabric route to a single output trunk. The forwarding table may favor output ports which are nearest to a packet input port, and the forwarding table may be modified to dynamically balance load across the trunks of a composite trunk.

The method for load balancing recited in claim 5 includes the limitations of determining a flow rate of a first frame and second frame, determining if the flow rate exceeds a predetermined flow rate threshold, and determining if the first and second frames are candidates for link switching. Carvey does not disclose or suggest these elements of the claimed invention. Rather Carvey discloses an entirely different method

for balancing the load across output trunks. Specifically, Carvey discloses that “the fabric forwarding table can be adjusted to dynamically balance the load across output trunks. The load can be balanced by finding a forwarding table entry that directs packets to the overloaded output trunk and rewriting the route in this entry to direct packets to a more lightly loaded output trunk” (Carvey, Column 6, lines 60-65).

The Office Action stated that Carvey discloses that the system is an optical system that uses SONET protocol for operating, and therefore the load balancing calculation between routers must be based on SONET frames. Carvey, however, only discloses that the load balancing is accomplished by rewriting the route in a forwarding table entry. Carvey does not disclose how to determine when the load balancing operation is required. In particular, Carvey does not disclose or suggest determining the flow rate of the frames, determining if the flow rate exceeds a predetermined flow rate threshold, and determining if the frames are candidates for link switching. Carvey, in order to accomplish its goal of balancing loads between composite trunks, fails to disclose the above stated limitations of claim 5.

Additionally, Carvey is specifically concerned with multiplexing multiple channels on a single optical fiber (Carvey, column 1, lines 59-67) and it is not clear what benefit would accrue to the system in Carvey of measuring the length of frames or packets. Carvey is more concerned with selecting an output port based on the distance to be traversed on the routing fabric (Carvey, column 3, lines 7-9). Thus, Applicants

respectfully assert that one of ordinary skill in the art would not have been motivated to modify the teachings of Carvey to reach the subject matter of claim 5.

Thus, Applicants respectfully submit that claim 5 should be allowed because it recites subject matter that is neither taught nor suggested by Carvey. Likewise, claim 7 should also be found to be allowable over Carvey for at least its dependence on claim 5, and for the specific limitations recited therein.

Applicants respectfully submit that Carvey fails to disclose or suggest critical and important elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 2-7 and 9-11 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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